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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Animal Industry
Washington 25, D. C.

PROCEEDINGS
of
COLLABORATORS' MEETING
on
FOREIGN POULTRY DISEASES

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Administration Building
Room 217-A

November 16 - 17, 1953

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Objectives - To study a survey of existing diagnostic facilities including the capabilities of individual laboratories; to develop an outline of acceptable procedures, and to provide qualified consultative diagnostic service for certain States and regions that are not equipped with adequate facilities or staff to meet an emergency.

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Room 217-A Administration Building
U. S. Department of Agriculture

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Robert Anderson..... Bureau of Animal Industry, Washington, D.C.

C. A. Brandly ..... Department of Veterinary Science, University of Wisconsin, Madison

M. R. Clarkson ..... Agricultural Research Service, Washington, DC

George Cottral ..... Plum Island Animal Disease Laboratory, Greenport, Long Island, New York

John P. Delaplane ..... School of Veterinary Medicine, Texas A & M College, College Station, Texas

E. M. Dickinson,..... Department of Veterinary Medicine, Oregon State College, Corvallis

C. L. Gooding ..... Bureau of Animal Industry, Inspection and Quarantine Division, Washington, D.C.

L. C. Heemstra ..... Bureau of Animal Industry, Inspection and Quarantine Division, Washington, D.C.

John M. Hejl ..... Bureau of Animal Industry, Virus-Serum Control Division, Washington, D.C.

William R. Hinshaw .....Camp Detrick, Frederick, Maryland

E. P. Johnson ..... Department of Biology, Virginia Polytechnic Institute, Blacksburg

Howard Johnson ..... Bureau of Animal Industry, Pathological Division, Washington, D.C.

E. E. Jones ..... California State Department of Agriculture, Division of Animal Industry, San Gabriel

Erwin Jungherr ..... Department of Animal Diseases, University of Connecticut, Storrs

J. J. Martin ..... Bureau of Animal Industry, Interstate Inspection Division, Washington, D.C.

Lawrence O. Mott ..... Bureau of Animal Industry, Pathological Division, Beltsville, Maryland

Attendance, continued

H. W. Schoening ..... Bureau of Animal Industry, Pathological Division, Washington, D. C.

M. S. Shahan ..... Plum Island Animal Disease Laboratory, Greenport, Long Island, New York

B. T. Simms ..... Bureau of Animal Industry, Washington, D.C.

R. K. Somers ..... Bureau of Animal Industry, Meat Inspection Division, Washington, D.C.

Thomas W. Tamoglia ..... Bureau of Animal Industry, Virus-Serum Control Division, Madison, Wisc.

A. L. Tellejohn ..... Bureau of Animal Industry, Virus-Serum Control Division, Washington, D.C.

C. H. Thompson ..... Bureau of Animal Industry, Pathological Division, Washington, D. C.

Frank Todd ..... Federal Civil Defense Administration, Washington, D. C.

Robert E. Zwickey ..... Agricultural Marketing Service, Poultry Division, Washington, D. C.

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DEVELOPMENT OF SPECIFIC RECOMMENDATIONS ON FOREIGN POULTRY DISEASES

Committee on Recommendations for Organization and Development of Regional Diagnostic Services

Committee on Recommendations for Laboratory Facilities, Procedures and Personnel

Committee on the Requirements for the Control of Foreign Poultry Diseases

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The Problem of Diagnosis and Control of Foreign Poultry Diseases - H. W. Schoening

Our correspondence with you has reviewed the position of the Bureau of Animal Industry in the control of exotic diseases, expecially vesicular diseases. Schools have been given on the diagnosis of vesicular diseases in the field. However, poultry diseases are different. Diagnosis is made in the laboratory rather than in the field. Therefore, competence and facilities are necessary in the laboratory. Public Health Service has a similar situation with reference to civil defense. They have master laboratories in different regions. These laboratories have special facilities for the diagnosis of exotic or even diseases which we have in this country which develop peculiar aspects. They are also interested in diseases transmitted from animal to man. The Harvard University project on Newcastle disease and Fowl Pest is an example of the utilization of a special facility for disease diagnosis and investigation.

We hope, here at this meeting, to develop a plan of action making possible early and accurate diagnosis of exotic or domestic poultry diseases having peculiar aspects.

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Responsibilities and Relationships of State Livestock Sanitary Authorities, Bureau Inspectors in Charge, and the Washington Office of the Bureau .... Dr. M. R. Clarkson

It is appropriate to keep foremost in mind that the livestock pupulation is vulnerable to biological warfare. Our system of handling animals, and the free movement of animals, makes possible an explosion of disease from a small beginning. Planning for defense against such outbreaks has been centered around the Bureau of Animal Industry and the State Veterinarians as offices having authority vested in them for the control of animal diseases. Once work is beyond the research stage, these offices would deal with control and eradication. Any lack of harmony in these offices is fatal.

People working in the States, in general, are familiar with animal diseases but are less familiar with poultry diseases. Thus we are not as well prepared to meet biological warfare in poultry. This lack of information must be overcome. Regarding our relationship with research institutions and the industry in handling biological warfare, we should have well-considered uniform plans. Many forces tend to draw our people away from such plans. Other procedures may appear best under certain circumstances. Other persons, well trained, in that area may have other ideas. This is one problem we run into continuously. I hope this group will guide us so as to avoid it. We want to make the laboratory an important part of this plan, recognizing that, especially in the case of poultry, it may not always be possible to make the diagnosis on the premises. In any case material should not be sent to any laboratory having questionable facilities.

Committee No. 1 is to prepare recommendations for an organization for the development of regional diagnostic services. Committee No. 2 must recommend the procedures to arrive at a diagnosis.

Committee No. 3 will be concerned with the requirements for the control of foreign poultry diseases. I don't know how specifically procedures can be put down which will result in the least interruption to the industry. The time required for arriving at the diagnosis may cause someone to lose considerable money. "Dry runs" do occur frequently. Accurate facts and good judgment are essential in arriving at a uniform procedure for controlling a disease. I cannot overstress the importance of this committee.

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The Existing Regulations for the Importation of Poultry; Origin and Volume of Imports; Illegal Entry of Birds - L. C. Heemstra

Prior to June 18, 1950, the Department's sanitary regulations governing the importation of livestock and certain other animals did not include poultry. An outbreak of Asiatic Newcastle disease in California in April of that year, traced directly to an importation of game birds from Hong Kong, China, prompted present regulations. Such regulations are contained in BAI Order 379 (9 CFR 95) and include permits, certification, inspection, and quarantine.

For the purpose of administering the regulations the definition of poultry includes chickens, ducks, geese, swans, turkeys, pigeons, doves, pheasants, grouse, partridges, quail, guinea fowl, and pea fowl, of all ages, including their eggs for hatching.

For poultry intended for importation from any part of the world (except Canada) the importer is required to first obtain a permit from the Bureau of Animal Industry. Based upon our knowledge of disease conditions in the country of origin, or in an area within a country, we are sometimes in a position to deny the issuance of a permit when it is felt that an importation cannot be made with safety. Information concerning disease conditions in foreign countries is usually obtained through correspondence or from official dispatches from the American consulates and embassies. Unsatisfactory handling of a previous shipment by an importer would also be a basis for refusal to issue a permit.

What we practice in respect to one country in the issuance of permits we must also do in other countries under similar circumstances. Accordingly, when it is alleged by the importer or exporter that the import requirements can be complied with it is our general policy to issue permits as requested with the understanding, of course, that veterinary officers in the country of origin will not certify to freedom from disease, exposure thereto, and that an area or a locality is free from specified diseases if that is not the case.

Shipments of poultry for which a permit has not been issued sometimes arrive at our ports of entry. Except in instances in which there are valid extenuating circumstances, such shipments are returned to the country of origin.

All poultry offered for importation from any country (including Canada) must be accompanied by a certificate issued by a salaried veterinary officer of the national government of the country of origin. Such certificates, when properly completed, state that the poultry and their flocks of origin were inspected on the premises of origin immediately before the date of movement from such country; that they were then found to be free from evidence of specified diseases and exposure thereto for a period of at least 60 days next before shipment; and that so far as it has been possible to determine certain diseases have not existed in the locality or area from which the birds were shipped during the 60-day period.

The accompanying health certificates are probably of limited value. From some countries they are considered to be entirely reliable - from others they may mean very little.

All poultry offered for importation is carefully examined at the port of entry by veterinary inspectors. If found to be apparently healthy, the birds are permitted to go forward to quarantine.

Quarantine is for a minimum period of 15 days. Such quarantine is at the importer's expense. The only quarantine facility maintained by the government is the Athenia quarantine station located in Clifton, New Jersey. This station serves the port of New York area. At other designated ports of entry, the importers must provide quarantine facilities acceptable to the Bureau's inspector in charge at that port. Quarantine is not required for poultry less than 60 days of age, for hatching eggs, or for poultry imported from Canada.

Blood tests or other tests are not required of poultry in quarantine. Nevertheless, it is believed that import poultry, if affected with certain exotic diseases, such diseases will show up in quarantine. Accordingly, it is considered that the quarantine constitutes the most important part of our import regulations and stands as a bulwark between the poultry industry of this country and the possible introduction and dissemination of certain diseases, particularly fowl plague and lethal strains of Newcastle disease.

With respect to the illegal entry of poultry into this country we do not have a great deal of information. It seems reasonable to assume that some poultry is being smuggled in from Mexico and Canada - particularly from Mexico. No instances of poultry diseases because of such action have come to our attention.

We do have information that large numbers of psitticine birds are being smuggled into this country from Mexico. Legal importation of such birds is under the jurisdiction of the U. S. Public Health Service. Whether diseases transmitted by psitticine birds constitute a health hazard to our poultry industry probably merits the consideration of this committee.

During the period from June 1950 through September 1953, more than 13,000 birds of various kinds, subject to the regulations, entered quarantine and were subsequently released. This figure does not include import poultry from Canada. The birds were covered by 764 permits and originated in 31 foreign countries. More than 90% were transported by air from the country of origin to the port of entry. This fact emphasizes the importance of an adequate period of quarantine.

Approximately 3% of the import birds died in transit or in quarantine - a relatively low figure inasmuch as many of the birds were wild and not accustomed to confinement. Many dead birds were submitted to recognized laboratories for examination. In no instance was Newcastle disease or fowl pest diagnosed. Most of the deaths appeared to be due to parasitism and emaciation.

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Explanations of Permits for Entry of Specimens and Cultures into the United States and Their Further Distribution Thereafter. Examples for the Necessity for these Permits ..... O. E. Herl (Read by A. L. Tellejohn)

The authority for the control of the importation of specimens and cultures is contained in an Act to enable the Secretary of Agriculture to more effectively suppress and prevent the spread of contagious and infectious diseases of livestock. This Act was approved February 2, 1903 (32 Stat. 792; 21 USC 111)

The law provides "that the Secretary of Agriculture shall have authority to make such regulations and take such measures as he may deem proper to prevent introduction or dissemination of the contagion of any contagious, infectious, or communicable disease of animals from a foreign country into the United States or from one State or Territory of the United States or the District of Columbia to another *********"

The handling of permits to import infectious materials presents a large variety of requests, some of which are very perplexing. The requests range from permission to import simple non-pathogenic cultures of bacteria through the gamut of specimens of feces from normal or diseased animals to virulent cultures of bacteria and viruses of exotic diseases. Requests have been received to import foot-and-mouth vaccine material for commercial laboratory experimental work which, of course, are always denied. On one occasion, a foot-and-mouth vaccine was brought in without a permit, and unknown to the consignee, but thanks to those to whom it was consigned, it was soon taken into custody and destroyed.

Frequently requests to import organisms or vectors have to be denied because the person or laboratory worker desiring to make the import has isolated an organism or virus which he desires to compare and experiment with the causative agent of some foreign animal disease. Along with the denial of such request we usually suggest that the comparative studies be carried out in the country where the foreign animal disease exists.

During 1952 a committee within the Bureau asked Dr. Herl, of our Division, whether our regulations were adequate to control the interstate transportation of organisms or vectors. We believe that our regulations are sufficient if properly applied and if research workers are properly acquainted with the law. Accordingly, on October 8, 1952, a "Notice to Laboratories, Research Institutions and Individuals Studying Animals" was released. This Notice in its entirety, is as follows:-

ZV
October 8, 1952

NOTICE TO LABORATORIES, RESEARCH INSTITUTIONS AND
INDIVIDUALS STUDYING ANIMAL DISEASES

Permit Required to Import or Transport Interstate Restricted
Animal Disease Organisms and Vectors

In recent months several instances of illegal movement of animal disease organisms and vectors in interstate commerce have come to the attention of the U. S. Department of Agriculture. Conditions under which restricted organisms and vectors can be moved under permit are explained in the Department's Bureau of Animal Industry Order 381, Part 122, entitled "Rules and Regulations Relating to Viruses, Serums, Toxins, and Analogous Products, and to Certain Organisms and Vectors."

Because of the inherent dangerof such movements and the increasing need for taking every precaution against the spread of infectious animal diseases, all laboratories, research institutions, and others dealing with animal disease organisms and vectors are requested to comply with this order. Movements are allowed under permit only when such shipments serve the public interest and after ample safeguards are provided to protect against the further dissemination of such agents.

The Act of Congress approved February 2, 1903, (32 Stat. 792; 21 U.S.D. 111) confers upon the Secretary of Agriculture authority to make such regulations and take such measures as he may deem proper to prevent the introduction or dissemination of the contagion of any contagious, infectious, or communicable disease of animals from a foreign country into the United States or from one State or Territory of the United States or the District of Columbia to another . . . . whenever in his judgment such action is advisable in order to guard against the introduction or spread of such contagion.

Under that authority, Part 122 of BAI Order 381, "Rules and Regulations Relating to Viruses, Serums, Toxins, and Analogous Products, and to Certain Organisms and Vectors," provides that no organisms or vectors shall be imported into the United States or transported from one State or Territory or the District of Columbia to another State or Territory without a permit issued by the Secretary and in compliance with the terms thereof.

Section 122.2 provides that the Secretary may issue at his discretion a permit when proper safeguards have been set up to protect the public. Application for such a permit shall be made in advance of shipment and each permit shall specify the name and address of the consignee, the true name and character of each of the organisms or vectors involved, and the use to which each will be put.

All persons engaged in research involving the use of organisms or vectors as defined above should become familiar with the contents of this notice. Further information and applications for permits may be obtained by writing to the Chief, Bureau of Animal Industry, U. S. Department of Agriculture, Washington 25, D. C.

This notice probably created more confusion as a result of its release and it was necessary to make a subsequent release to clarify the original and to arrive at something which could be enforced on a practical basis. This was further carried out in another notice dated May 12, 1953, which reads as follows:-

ZV
May 12, 1953

NOTICE TO LABORATORIES, RESEARCH INSTITUTIONS AND INDIVIDUALS STUDYING ANIMAL DISEASES

Permits Required to Import or Transport Interstate Restricted Animal Disease Organisms and Vectors

On October 8, 1952, a press release was issued by the Bureau of Animal Industry, Virus-Serum Control Division, which pertained to the interstate transportation of organisms and vectors. The release was published in many scientific journals and other publications. The purpose of the release was to direct attention to the fact that permits authorized by the Secretary of Agriculture for importation of organisms and vectors were also necessary to transport interstate such organisms and vectors.

In actual practice in the past, permits for transportation only have been required for organisms or vectors (including viruses) which have been first imported from a foreign country. Letters of transmittal accompanying each permit for importation have specifically stated that further distribution is forbidden without Bureau authorization.

While the Bureau has a responsibility in safeguarding our livestock and poultry in the prevention and control of diseases of domestic and foreign origin, it is not the intention to interfere with the normal shipment of specimens to diagnostic laboratories, or to the transfer of the common microorganisms or viruses indigenous to this country between research workers and laboratories. This regulation has been so interpreted for a number of years. However, many inquiries have been received following publication of the release of October 8, 1952, and it is desired in this notice to more clearly state the Bureau's position and requirements in regard to permits.

A. Permits for interstate transportation are not required for that class of organisms, vectors, or viruses which are the etiological agents of the more prevalent and common animal diseases found in this country. Examples are as follows: specimens for laboratory examination; pasteurella group; salmonella group; clostridia group; Newcastle disease virus of mild virulence isolated in this country; fowl-pox virus; hog cholera virus; swine influenza virus; canine-distemper virus, and the like. It can be seen that the pathogens enumerated are readily found in this country and are of everyday disease significance.

B. Permits are required in advance (1) for the further transportation of those organisms, vuruses, or vectors which were first imported; and (2) for the transportation of animal pathogens or vectors which may cause diseases of a severe, unusual, or contagious nature; or belong to the class of diseases, the distribution and incidence of which are not well known; or which potentially may set up outbreaks of disease; etc. Examples are as follows: Veneguelan equine encephalomyelitis virus; Asiatic or other highly virulent strains of Newcastle disease virus; plasmodium berghei; blue tongue virus; scrapie virus; vesicular disease viruses; and any other foreign animal disease-producing viruses or organisms which accidentally or otherwise may have gained entrance into the United States.

Where there is any doubt as to whether a permit is required in the interstate transportation of material, organisms, viruses or vectors, inquiry should be made to the Chief, Bureau of Animal Industry, U. S. Department of Agriculture, Washington 25, D. C. Further information and applications for permits may be obtained by writing to the Bureau.

Persons making shipments of cultures, etc., should refer to postal regulations for packing requirements.

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Problems Relating to the Deliberate Introduction of Foreign Poultry Diseases ..... F. A. Todd

GENERAL:

We know that there always exists the threat of the accidental introduction of foreign diseases of animals and poultry into this country in spite of all the precautions that we can take. An absolute protection against the entrance of a foreign disease into this country is impossible. Foreign diseases have gained entrance in the past and will continue to appear from time to time in spite of our efforts.

It must be remembered that in addition to this normal peacetime menace there is the current biological warfare threat dealing with the possibility of the deliberate introduction and spread of disease. The willful introduction of disease into this country can cause many problems. An enemy can select

the host, disease, time and place. He can also distribute unusually large numbers of organisms and pests, utilize more effective methods of dissemination, as well as unusual portals of entry. An enemy can increase the problem by using several agents of similar diseases, simultaneously. The combining of disease agents of different types might produce more than one disease in the individual host with contradictory symptoms and varying incubation periods. Such combinations might even act synergistically to make others more effective.

Unfortunately, there are a number of animal diseases, native and foreign, benign and highly fatal, that present similar symptoms, all of which increase the diagnostic problems. It is important that we keep this in mind. The presence or the suspected presence of one of these diseases that may be thought of as only a common endemic disease may in reality be masking a more serious foreign animal disease.

I believe that records indicate that several foreign poultry diseases have gained entrance into this country by the importation of undeclared laboratory cultures, from smuggled birds, and from importing insect vectors and birds during the carrier stage or during the incubation period. We also know that raw garbage, contaminated feeds and veterinary biologics have been factors in spreading disease in this country.

The appearance of a foreign poultry disease in this country initially poses many problems. In some cases there would be the lack of experience and knowledge of dealing with the infection, the susceptibility of our poultry population or the absence of immunity to the disease and the lack of an effective biologic that might be required for control purposes. In addition to the losses resulting from the effects of these diseases, the restriction of agricultural commerce that might be required in carrying out quarantines is an economic factor that must not be overlooked.

PROBLEMS

Enemy airplanes could try to spread disease to farm animals and poultry by using bombs or spray tanks modified to create clouds of the infectious agent over limited targets or to blanket wide areas. Aircraft and balloons could launch similar attacks using a wide variety of devices. More likely, however, attacks against farm animals would be carried out by secret acts of sabotage.

Sabotage would certainly be conducted at livestock and poultry concentration centers such as stockyards, railroad terminals, sales barns, hatcheries, biological plants, feed production plants or feed mixing establishments.

It is conceivable that a clever saboteur might use biological products as a means of spreading destructive diseases to this country's poultry population. This potential threat has been brought to the attention of the biological industry. To aid in disease prevention it would be highly desirable for the Federal and State animal disease control officials to establish a cooperative program of requiring information from each biological production and distribution agency relative to those products, sold within the respective States, capable of initiating foci of infection and those antigens used for disease control or eradication programs.

In this connection it is pointed out that there are numerous laboratories for the production of biologics used by the poultry industry supposedly doing only an intrastate business and therefore not under the supervision of the Federal government. It is essential that these laboratories be under strict supervision by the State in which they are located to assure the production and distribution of a safe product.

The potential threat of the accidental or intentional contamination of animal feeds at the processing plants and distribution points should be kept in mind.

Several persons have suggested that bacterial diseases such as fowl cholera and fowl typhoid might be used for sabotage purposes in feed mixing establishments, especially when they are located near or in centers of heavy poultry concentrations. Chemical poisonings from this source should not be overlooked.

Danger of introducing and spreading disease is always present in raw garbage feeding. Tuberculosis, Newcastle disease and other diseases and parasites can be spread by this means.

PREVENTION AND CONTROL

Prevention is the ideal means of combating disease. (Its success depends to a great extent on the application of strict quarantine measures and under some circumstances, preventive immunization.) The history of sanitary control suggests that succesful quarantine is possible only under favorable conditions, and over relatively short periods of time. Public understanding and support is an essential part of a workable quarantine. The carrier and the atypical case should be given proper consideration.

The need for and the importance of an established nationwide animal disease reporting system cannot be over-emphasized.

Every effort should be made to assure reporting of any disease of undetermined character, or any unusual incidents in connection with diseases already existing within a State or county. Such occurrences should become subject to immediate investigation and receive such technical assistance as may be considered necessary by the Federal, State, Bureau of Animal Industry officials.

There is a serious need for improved diagnostic procedures resulting in more accurate and rapid means of diagnosis. Unfortunately there are a number of native animal diseases that produce symptoms that are similar, and in some cases identical, to more dangerous foreign diseases. This increases the problems of quickly confirming a diagnosis. Because of this we should be concerned with each outbreak of such native diseases since there always exists the hazard that each outbreak may be masking an exotic disease. Research in this field should include the adapting of serological tests such as serum neutralization, serum protection and complement fixation to the various foreign animal diseases that are considered potential biological warfare threats.

If a foreign disease gains entrance into this country subsequent course of events will depend upon conditions existing within the country or community into which the infection has been introduced. I believe that is the subject of this meeting and will be discussed and a tentative program suggested during the next several days.

Comment from a Collaborator - The confusion that might result if concurrent infections should occur should be emphasized. In 1925 fowl pest and laryngotracheitis epizootics were the source of confusion. That is, laryngotracheitis occurring in the west was thought by some to be fowl pest. Also the subject of bacterial genetics should be mentioned. The disease may be changed so that a laboratory may not recognize it. Variant pullorum is an example. This might also be utilized by changing the resistance of an agent to drugs - antibiotics.

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The Foreign Poultry Diseases ..... C. A. Brandly

The European countries say that they don't have the disease problem that we do. The type of production which they have is different from ours. Some countries may be reluctant to talk about their disease problems. Certainly this country's methods of production favors the spread of disease. Commercial hatching as we have in this country favors disease dissemination.

Two new diseases are being mentioned in other parts of the world. "Round heart" disease is a chronic condition of unknown etiology that is observed in Australia. The Orientals describe an acute disease which may, or may not, be Newcastle disease or fowl pest. Fowl pest apparently only occurs in Palestine and Egypt. Daubney encountered mixed outbreaks of Newcastle disease and fowl pest in Egypt. Komarov in Palestine admits having both diseases there.

We should keep in mind that the importance of a disease can be mitigated by controlling its dissemination. Our emphasis should be on obtaining more knowledge on epizootiology. The importance of insect vectors has been minimized. Also the importance of aerosols must not be overlooked. For example, fowl plague may be increased in transmissibility by aerosol. We need to have more people working on the problem of detection. The increase in veterinary graduates will not keep up with our population increasing as it is. More support for graduate training is needed. There is great need for basic research. This in turn can be used for applied research - the current commercial practice. This applies to research on poultry disease. For instance the variations of Newcastle disease antiserum to Newcastle disease antigen in diagnostic titers needs to be followed.

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A Survey of Diagnostic Facilities in the States .... C. H. Thompson

In July of 1951 we asked our inspectors in charge to obtain information on the poultry diagnostic facilities in their respective States. A questionnaire was prepared containing the following questions:-

1. What are the official designations and locations of the recognized poultry diagnostic laboratories in your State?

2. Are these laboratories under the direction of the State Department of Agriculture, State Agricultural Experiment Station, or other agency?

3. Give names and addresses of the directors of the Laboratories.

4. Do the laboratories have the physical equipment (bacteriological incubator, refrigerator, centrifuge, microscope, autoclave, facilities for preparation of media and glassware, etc.) necessary for diagnosing (1) bacterial, (2) viral, and (3) parasitic diseases of poultry by standard or acceptable procedures?

5. Are the laboratories staffed by personnel qualified to carry out the necessary diagnostic procedures?

6. Is a responsible technical person available at all times?

7. Are the laboratories equipped to conduct hemagglutination, hemagglutination-inhibition, and/or serum-neutralization tests, as well as bird inoculation tests for the diagnosis of Newcastle disease?

8. Are the tests mentioned in question 7 carried out routinely?

9. Are the laboratories physically equipped to house birds in complete and safe isolation for the diagnosis of such poultry diseases as the highly virulent forms of European or Asiatic Newcastle disease?

10. By what means are poultry carcasses and other contaminated laboratory wastes disposed of - autoclaving at the laboratory? incineration at the laboratory? - local rendering plant? - trash collection (municipal)? - trash collection by private party?

11. Are the ability and competence of the laboratory staffs recognized by the State authorities, especially the livestock sanitary authority cooperating with the Bureau?

The replies indicated that there are 91 laboratories (excluding private laboratories) in the United States which do poultry diagnostic work. Sixteen of these laboratories considered they were not equipped for diagnosing viral infections of poultry. Twenty-nine of these laboratories reported that they did not routinely carry out the tests used for diagnosing Newcastle disease. Thirty-four of these considered that they had facilities where they could safely isolate birds for the diagnosis of highly virulent disease.

In my opinion some of these answers automatically render themselves negative when the answers to the other questions are studied. For instance, the method of disposal of carcasses and laboratory wastes would weigh heavily in my interpretation of this answer. In answer to the question concerning the disposal of laboratory refuse, 36 reported autoclaving at the laboratory, 52 incineration at the laboratory, 17 disposal through the local rendering plant, 13 disposal by municipal trash collection, and 7 by private trash collection.

(A map of the United States was displayed showing by pins the location of the 91 laboratories)

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Procedures and Technics for the Diagnosis of Foreign Poultry Diseases such as Fowl Plague, Lethal Strains of Newcastle Disease, Spirochetosis, Malaria, etc. - ..... E. L. Jungherr

The procedures and technics for the diagnosis of foreign poultry diseases may be divided into GENERAL and SPECIAL aspects, both of which are subject to extension and revision in accordance with increasing experience.

GENERAL

1. Potential field investigators should be provided with a notebook, disposable bag or paper, standard disinfectant, postmortem instruments (knife, scissors, pincers, scalpels), 10 ml. sterile Luer syringes and 18 g. needles in glass tubes, rubber boots, aprons, gloves, nonbreakable thermos, CO_2 ice obtained locally, sterile tissue containers, to fit above, wide-mouthed 2 oz. bottles plus 10 percent formalin, specially cleaned 1" x 3" microscope glass slides, alcohol lamp or blow torch, and mailing cartons.

2. The history to be obtained should include the location (how to get there), name of owner, common and/or mailing address, phone number, general farm set-up (number of all animals by age groups, rough plan of buildings and ranges), species and percent affected (one or more, including wild species), age of birds affected, breed affected, and the use of the birds affected.

3. Collection of specimens from individually identified birds includes, if alive, a record of the symptoms, a thin blood smear, a thick blood smear, and a 15 ml. sterile slanted blood sample. Then killing by disjointing the

neck (preserving the trachea), record the gross pathology, freeze samples of the heart-clot, liver, spleen, lung, trachea, intestines, cord, and half the brain. Fix in formalin 5 mm. thick slices of liver, spleen, lung, trachea, intestine, kidney, muscle, cord, and half the brain, and ship to regional diagnostic laboratory.

4. Utilization of existing diagnostic facilities should provide access also to well equipped medical laboratories such as collaborating laboratories under the U. S. Public Health Service program of sectional research in microbiology.

5. Laboratory examination should include the following methods:

bacteriologic - aerobic (also selenite F for salmonella) and anaerobic

toxicologic - penicillinized tissue extracts intraperitoneally into mice

mycologic - Sabouraud's agar and Littman's streptomycin agar

virologic - embryonated chicken eggs (6-day for yolk sac and 10-day for allantoic sac) inoculated with and without specified antibiotics

serologic - hemagglutination, hemagglutination-inhibition, and specific serum neutralization tests, complement-fixation test, and complement fixation-inhibition tests

histologic - routine and special, according to needs

hematologic

6. Diagnosis should be made with special emphasis upon differential diagnosis from domestic poultry diseases.

SPECIAL

In suspected

Fowl plague - do egg inoculations into the allantoic sac using antibiotics. Observe the gross embryo pathology. Perform hemagglutination and serum-neutralization tests on the allantoic fluid, and do tissue pathology.

Newcastle disease - handle same as above

Spirochetosis - do blood smears and egg inoculation (to rule out vibriosis), histology with Levaditi's method, and give arsenicals for flock treatment

Avian malaria - do blood smears, histology with Giemsa after Zenkerization; treat the flock with plasmodiocids

Eastern equine encephalomyelitis - do egg inoculations with antibiotics followed by serum-neutralization test; and histology especially on the brain and cord

Ornithosis - do egg inoculation via the yolk sac sans antibiotics, then do yolk sac smear and stain with Machiavello's stain; do mice inoculations intraperitoneally, intranasally, and intracerebrally with sterile spleen (include blind passages); do complement-fixation test for pigeons and complement fixation-inhibition test for other birds

Botulism - do mice inoculations intraperitoneally with antibiotics (penicillin protection); serum-neutralization test in mice; and histologic examination (to demonstrate lack of lesions

A and B antitoxin is satisfactory. C antitoxin is difficult to procure. If you hold turkeys on water for 48 hours they will recover.

* * * *

Minimum Facilities for the Diagnosis of Foreign Poultry Diseases ..... E. P. Johnson

The first requirement is to have facilities for holding live birds in isolation. It is not necessary to have expensive buildings. Actually all diagnostic laboratories should have facilities for holding live birds until examined. Safe ventilation, drainage, and disposal facilities are essential. These should be the requirements for anyone doing diagnostic work.

* * * *

Utilization of Special Diagnostic Facilities on a Regional Basis ..... J. P. Delaplane

The following points are offered for consideration in connection with the utilization of special diagnostic facilities:-

1. A survey of all fields of specialization in the various diagnostic and research laboratories of the States of the region should be carefully studied and evaluated.

2. Assign to such laboratories, so far as possible, the task of assisting other laboratories of the region by conducting various specialized tests which will aid the general laboratory in its diagnostic work.

> Example: Very few laboratories are equipped, at the moment, to conduct tests on seras for bovine leptospirosis or vibriosis. It is a convenience to be able to submit such samples to laboratories specializing in this field. The demand for such a testing program is so limited at the beginning that no financial support, or personnel, is made available to undertake such a testing program.

3. Certain laboratories of the region should serve as a repository for highly specific diagnostic sera, domestic and foreign in scope.

4. Certain laboratories should serve as repositories for all the various viruses and other pathogens common to the United States so they may be available for comparative studies as situations may warrant. It is realized that considerable effort would be required to maintain such viruses in a desirable state so one or more laboratories could be designated for certain ones.

5. Certain laboratories, through established personnel and facilities, are in better position to undertake and interpret micro-pathological studies and could well serve as a reference laboratory for those less well equipped or trained in such techniques.

6. In any region at least one laboratory with adequate personnel, as well as facilities for strict isolation and disease-free laboratory birds and animals, should be available for survey studies as they may relate to newly recognized infections or those of foreign origin as they are observed in the area.

> Example: Had such facilities been available in the Del-Mar-Virginia region five years ago, our appreciation of the "air sac problem" would have been recognized sooner and we probably would have a much clearer understanding of the problem, or problems, involved.

7. Some form of cooperative undertaking with the inspection personnel at poultry dressing plants should be inaugurated on a regional basis for the following reasons:

> a. Flock suffering from newly introduced infections may very well first be recognized at such a plant.
>
> b. The condemnation records be studied properly and evaluated. They could serve as an index to the major disease problems current to a given area, and the type of research necessary to properly understand the problem.
>
> c. Veterinary inspectors at such plants should be encouraged to refer properly obtained specimens to the diagnostic laboratories for determination of infective agents.
>
> d. It would seem well justified for any of our best trained research workers to spend time studying and evaluating the disease conditions observed in poultry dressing plants.

8. Through cooperative efforts compile statistics on the frequency of occurrence of diseases on a State and regional basis as observed in the diagnostic laboratories.

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Procedures for Handling Suspect Outbreaks of Foreign Poultry Diseases ..... E. E. Jones

The following procedures for handling suspect outbreaks of foreign poultry diseases are offered for consideration:

1. Endeavor to gain and maintain the confidence of those in the poultry industry. There are commercial poultrymen, breeders, hatcherymen, feed manufacturers, processors and shippers who are concerned with poultry diseases. Generally these representatives are in rather close contact with research stations, and particularly with diagnostic laboratories. As a result they are relatively well informed on the common poultry diseases and are likely to furnish history on outbreaks of an unusual character.

2. Obtain and record pertinent information on the source of birds and other history of suspicious cases which are submitted for laboratory diagnosis. Get the names and addresses of the feed company serving the ranch and also chicken and egg buyers, haulers of fertilizers, or others who may have recently been on the ranch.

3. Contact official agencies if quarantine measures appear to be indicated. Before a diagnosis is made there may be reasons to issue a hold order or a temporary quarantine according to local laws and regulations.

4. Plan diagnostic procedures. Inform responsible personnel of the possibilities of the introduction of foreign diseases. When suspicious cases occur the laboratory staff should be alerted so that all precautionary measures would be taken to prevent spread of an infection. Diagnostic procedures should be discussed. Healthy susceptible young chickens, chicken embryos, and fertile eggs should be procured for inoculation purposes. An available source should be known. There should be a supply of artificial media and special essential equipment on hand.

Autopsy examinations and other laboratory diagnostic procedures should be done with strict sanitary precautions. The importance of strict isolation of test animals must be stressed. Properly ventilated tight rooms should be provided. The caretaker must take measures at all times to prevent spread of any infection. All animals and equipment should be destroyed or sterilized upon completion of tests.

5. The most successful control measure is complete eradication. Provisions should be made for emergency expenditure of funds for labor and for technical assistance if needed. There should be a program developed for the payment of indemnities on a percentage basis by the Federal and State governments.

6. Eradication procedures:

All domestic fowl on infected premises should be destroyed. In concentrated poultry areas it might be advisable to destroy the birds on adjoining ranches. If there has been any recent traffic in fowl from infected ranches, those should also be destroyed. For lethal Newcastle disease - immunize poultry in buffer zone.

The method of slaughter is optional if humane and sanitary methods are used. For large flocks, if an airtight pen is available, birds could be moved into the closed pen and carbon monoxide gas administered from a gasoline engine. Tarpaulin could be used in open sheds to retain the gas. In small flocks the individuals could be handled in crates and destroyed by injections of a poison such as nicotine sulfate, or the necks could be broken manually. The cooperation and assistance of pest control authorities should be obtained for the purpose of destroying wild birds and vermin. Destruction of the carcasses by burning would be preferable, but deep burial in lime would suffice. Personnel should be supplied with rubber shoes and other equipment which could be properly sterilized.

7. Following slaughter, the premises should be cleaned of all trash, worthless lumber, etc. Combustible material should be burned. Houses and equipment should be thoroughly cleaned. The liberal use of lye facilitates cleaning and it is a valuable disinfectant for some infections. After thorough cleaning, a reliable coal-tar disinfectant should be used liberally.

Four weeks later contact birds should be housed on the premises and observed daily for 10 to 14 days. After test birds are found to remain healthy, the premises may be released from quarantine and the ranch restocked. During the eradication program all poultry in the surrounding area should be regularly inspected.

* * * *

Diagnostic Materials which should be Stockpiled and the Location of the Repository..... W. R. Hinshaw

Stockpiling for the emergency diagnosis of exotic diseases of poultry should not be a difficult nor an abnormally expensive task for laboratories already equipped for diagnosis of the existing poultry diseases. The well-organized system of laboratories for handling of diagnosis of poultry diseases in most States will help to facilitate the proposed program. The tools for handling emergency diagnosis are essentially the same as for the routine diagnosis of an existing disease. These include laboratory equipment, laboratory personnel, chemicals, media and other supplies, animal isolation units and laboratory animals. If laboratories are properly equipped they should have adequate facilities to take care of emergencies. Actually, these subjects have been covered by Dr. Jungherr, Dr. Johnson, and Dr. Delaplane. Dr. Jones has covered the procedures for handling suspect outbreaks, so there is little for me to add.

The essentials for stockpiling should ideally include the following items:

1. Representative strains of causative agents which might be introduced

2. Diagnostic serums

3. An ample supply of the species of laboratory animals required for all the diseases that are likely to be introduced

4. Specific antigens necessary for diagnosis of the various diseases.

The stockpiling program should also include plans for development of a good reference museum and library for each regional laboratory. Items for this phase of an ideal program should include:

a. Representative gross pathological specimens for all exotic diseases

b. A kodachrome library

c. Movies, pictures, charts, etc.

d. A file of slides for histopathological study

e. Collections of exotic parasites (external and internal) including stained slides of protozoa

f. An adequate reference file of reprints and abstracts carefully cross indexed.

Certain special equipment may also be necessary. Examples are:

a. Special isolation facilities, such as Horsfall units

b. Special safety laboratory equipment, such as Glickman hoods and chambers

c. Change rooms

d. Separate laboratory facilities

I was fortunate enough, during the past few months, to have an opportunity to visit the diagnostic laboratories and research facilities of the South African Veterinary Research Institute at Onderstepoort. One of the outstanding things I saw there was their museum. It is probably too elaborate to have for each one of the regional diagnostic laboratories which we are discussing, but certainly some of the ideas they had could be utilized. In general, their plan was to have a map showing the geographical distribution of diseases, actual photographs and specimens of the various diseases and, in many cases, kodachromes or colored pictures showing symptoms, gross and histopathology of the diseases. When arthropods were involved in transmission, they had specimens of these, so in a single exhibit one obtained the complete picture of the disease, including diagnostic methods.

I am spending considerable time on this phase of the problem because I believe that one of the real functions of the staff of the proposed type of regional diagnostic laboratory should be to act as the authority on the diseases concerned and to be the source of information for the education of the other diagnostic laboratories in that particular region. Such a plan, both for handling museums and for stockpiling specimens, could probably be made a function of the Federal Civil Defense Agency. Funds might be made available by this Agency for stockpiling of certain equipment as was done for emergency production of vaccines. Such funds could be justified as developing the facilities for adequate diagnosis of foreign diseases on a regional basis.

Another phase of my subject is repository locations. There certainly should be a central laboratory where all the exotic viruses and other agents can be held and maintained. Such a laboratory would have to be so located and constructed that the viruses and other agents that are held can be safely passed from time to time to ensure their viability. Ideally, each regional laboratory should be so constructed and arranged that the necessary viruses for emergency diagnosis could be made available to them from a central repository. Such laboratories would have to have specially

constructed rooms, chambers for isolation, and animal facilities which would be entirely separate from all others and prevent spread to the region. The U. S. Department of Agriculture, Agricultural Research Service, should maintain a central repository located in an area where, under properly controlled conditions, exotic infective agents could be properly maintained so that at all times they would be available for diagnosis and comparative study purposes. The Armed Forces Institute of Pathology could be the central repository for pathological specimens for reference study purposes, and I am sure that the staff at that Institute would be very glad to cooperate in such a mission.

I have not attempted to give types of agents and amounts and have given only general statements concerning what should be done. The details should be carefully worked out by a committee appointed to handle this phase of the problem. The functions would probably come under all of the committees that have been mentioned in the program for the development of specific recommendations on foreign poultry diseases.

I would like to suggest another thing which is not in my title but which is a subject in which I am very interested and believe should be promoted by the Federal Civil Defense Agency, or by such organizations as the American Veterinary Medical Association. If we are going to become proficient in making diagnoses of foreign diseases, I think it is very necessary that we get firsthand experience with these diseases. I have already suggested to the Research Award Committee of the AVMA that some attention should be paid to the possibility of giving grants for post-graduate work in foreign areas where the individuals can, by visiting laboratories and spending an adequate amount of time there, become familiar with some of the exotic or foreign diseases. On my recent trip I was much impressed with the willingness of all the laboratories visited to have foreign visitors, provided they came to stay long enough to become part of the laboratory team doing the work. All of them seemed to have funds enough for handling research, but they needed manpower. This could be made a function, as I mentioned above, of either the AVMA or the Federal Civil Defense Agency.

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Possibilities of Utilizing Service Personnel of Hatcheries, Feed Companies, and other Commercial Concerns in the Diagnosis of Foreign Poultry Diseases ..... E. M. Dickinson

In considering this topic it is realized that there may be considerable difference of opinion, among individuals, as to the possibilities of utilizing service personnel of hatcheries, feed companies, and other commercial concerns in the control of foreign poultry diseases. It is my feeling, however, that most will agree there are possibilities for utilizing such personnel and that it is desirable that their services, to the extent of their ability, be utilized. It would seem, therefore, that the chief differences of opinion would be on the range of activities that such service personnel may be relied upon to perform satisfactorily.

This report is to suggest some of the fields of activity that may be effectively performed by such service personnel and to propose a possible means of approach to this phase of the over-all problem. In the first place it must be kept in mind that there is a vast difference in ability and training of service personnel for different concerns that service the poultry industry. Further, one may expect a marked variation of opinion among individuals and organizations as to the importance of this threat from foreign poultry diseases. However, it is felt that by adjusting the pattern to fit the cloth, service personnel may be used effectively in several ways to assist in a poultry disease control program.

Fields of Function for Service Personnel - Since most service personnel are contact agents between their respective employers and the poultry producers, it appears to be natural that such personnel could serve best as additional aids for field contact. Some of the pertinent points to consider for effective field work by such service personnel are as follows:

(a) An educational program for service personnel that outlines the part in the over-all scheme that they are expected to play in the detection and control of foreign poultry diseases. (This could become a factor for good in the control of our common diseases in the nation.)

(b) Have outlined for such service personnel a method of procedure for making calls on any poultry producer; and an outline of special measures to follow when unusual disease situations are encountered. This includes knowing what regulatory officials or laboratories to contact for diagnosis and other action that may be taken.

(c) Instruct service personnel in the procedure of obtaining history of the case and selecting specimens for examination at designated laboratories.

(d) Service personnel should be called upon to cooperate with designated diagnostic laboratories by submitting all unusual cases of poultry diseases for diagnosis . Further, at frequent intervals specimens of a routine nature encountered by the service personnel should be submitted to the laboratory for checking.

(e) Service personnel should be called upon to aid in educational programs on disease control for poultry producers by encouraging poultry producers to attend meetings concerning disease control, and by themselves attending the meetings to keep abreast of information on the subject.

It would appear that the greatest contribution that service personnel could make to a program of detection and control of foreign poultry diseases would be that of field contact and education of poultry producers. Once the disease has been detected and turned over to the proper authorities the service personnel should be through with the case. For greatest safety for the poultry industry such service personnel should not be used for further work on the case.

Achieving the Objective - One of the first steps before enlisting the aid of service personnel would be to design a program of cooperation for service personnel. This program design, which may have a basic national design, should be developed for each State or region with the aid of State or regional poultry pathologists to take care of any special circumstances that may exist on a local scale.

Having developed a program for service personnel cooperation the approach for cooperation should be made to:-

(a) National Organizations
American Feed Dealers Association
American Poultry & Hatchery Federation
Any other organizations that may be helpful.

(b) State and Regional Organizations
Feed Dealers Association
State Poultry & Hatchery Federation
State Poultry Improvement Association
Any other organizations that may be helpful.

(c) Local and county poultry organizations
This includes organizations for service personnel.

The leadership and success of such a program would rest heavily on the State and local poultry pathologists coordinated by Federal veterinarians so that a uniform program could be developed to as high a degree as possible. For fullest participation it would be imperative to obtain cooperation from owners and management as well as the service personnel themselves.

It should be recognized that often personnel involved with the critical laboratory procedures and techniques necessary for accurate diagnosis of disease have neither the time nor the inclination (ocasionally not even the personality) to do the most effective job of public relations or contact. It is highly important not only to get a complete and accurate history of the disease in question but it is also important to get the history or obtain birds for examination in a manner that will cause, if possible, the poultry producer to feel he is a vital part of a great industry and his whole-hearted cooperation is needed to protect his enterprise as well as that of the entire industry. Service personnel of hatcheries, feed companies, and other concerns could render a vital service in this connection if the policy-forming bodies of the respective businesses for which they worked were encouraged to adopt a cooperative attitude toward poultry disease detection and control as it is carried out in all parts of the nation.

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Report Accepted from the Committee on Recommendations for Organization and Development of Regional Diagnostic Services

John P. Delaplane, Chairman
E. M. Dickinson
Frank Todd
R. K. Somers

I. That the U. S. Bureau of Animal Industry take the responsibility of making an up-to-date survey of the various States as regards their fields of special study, equipment, personnel, and other facilities for disease diagnosis.

(a) This will serve as a basis for Item II

II. Survey of the fields of specialization in the States of the region.

1. Special diagnostic procedures

(a) Serological such as C.F.I. tests or others
(b) Special laboratory animal inoculations

2. Special research problems

III. In a first organizational meeting of the States of the region, one laboratory with the greatest stability and potential advantages for disease diagnosis should be selected as the central regional laboratory, repository, and museum for the region. Remoteness from military targets, and standby utilities are to be considered.

1. Museum

(a) Gross pathological specimens
(b) Slides
(c) Movies and visual aids
(d) Exotic parasites
(e) Literature library, abstracts, etc.
(f) Repository for diagnostic sera and antigens
(g) Repository of certain infective agents

i. At a station where necessary facilities (safety features) are available for continued passage and viability and pathogenicity tests.

IV. Outline and have available for all laboratories of the region a list of reference laboratories designated for special studies in disease diagnosis, such as -

1. Serological studies
2. Virological studies
3. Histopathological studies
4. Bacteriological studies
5. Parasitological studies
6. Mycological studies

V. Outline a uniform system of reporting all poultry diseases from the laboratories of the region to the central laboratory and in turn to the national officials, such as -

Local area laboratories
State laboratories
Commercial laboratories
Reports from the inspection service of processing plants

VI. Research Projects

1. Propose and encourage research projects particularly with stress on improved diagnostic techniques as may come to light in view of the experience of following an organized approach as herein outlined.

VII. Educational Programs

1. All types of personnel involved in diagnostic work
2. For poultry producers and other interested personnel related to the poultry industry

VIII. Provide a system of alerting all laboratories throughout the nation whenever any unusual incidence of any poultry disease has occurred.

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Report Accepted from the Committee on Recommendations for Laboratory Facilities, Procedures, and Personnel

E. L. Jungherr, Chairman
George Cottral
W. R. Hinshaw
E. P. Johnson
C. H. Thompson

This report is based on the assumption that the recommendations are designed for a typical regional laboratory which has nearly adequate facilities now and would be enabled, by relatively minor support toward enhanced facilities and personnel, to fulfill the functions of a regional laboratory. Such a laboratory is visualized as being capable of

1. Arriving at a definite diagnosis in the shortest period of time

2. Acting in a consultative and educational capacity for surrounding diagnostic laboratories

3. Offering specially developed diagnostic skills to any laboratory desirous thereof

4. Taking the place of a screening station for referral of highly infectious material to a central USDA, ARS, or other approved or designated laboratory for extended transmission experiments in the same species, e.g., fowl plague and Asiatic Newcastle disease.

Facilities adequate for such a regional laboratory should comprise -

i. Trained field-investigational staff for on-the-spot epizootiologic studies and collection of specimens

ii. Isolation facilities for reception and short-time observation of live infected birds

iii. Disposal facilities, preferably by incineration

iv. Availability, at or near the laboratory, of chickens, turkeys, pigeons, ducks, rabbits, guinea pigs, mice, hamsters, and embryonated chicken eggs for diagnostic inoculations.

v. Well organized, preferably separate, units for carrying out standard examinations in the areas of

a. gross pathology and parasitology
b. bacteriology and mycology
c. virology, inclusive of virus isolation and serology
d. histopathology
e. toxicology, with emphasis on bacterial toxins and with access to a chemico-toxicologic laboratory.

It is suggested that a stand-by emergency power unit be provided.

Procedures in arriving at a diagnosis should follow accepted methods and eventually be replaced by standard recommendations for all regional laboratories.

In detail, the (a) gross pathologic examination should be preceded by obtaining a complete history of the case, especially through field study; (b) bacteriologic-mycologic examination should include selective tests for enteric organisms; (c) virologic examination tests for the presence of viruses by yolk sac and allantoic sac inoculation, with and without the use of antibiotics, and identification of viruses by the hemagglutination, the hemagglutination-inhibition, and specific serum-neutralization, tests. For the latter purpose reference antiserums, especially for fowl plague, should be made available, and (d) histologic examination by routine stains and special stains when indicated. For reference and repository service on histologic material, the cooperation of the Armed Forces Institute of Pathology should be solicited.

Personnel in a regional laboratory should consist of well-trained leaders of the major units outlined, each one supported by technical laboratory helpers. The director should be a veterinarian and have special experience in poultry pathology, and be charged with the responsibility for coordination and effective function.

In general it is the belief of the Committee that a regional laboratory organization should be tested out for workability during non-emergency times in order to assure proper function when the necessity arises.

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Recommendations Accepted from the Committee on the Requirements for the Control of Foreign Poultry Diseases

C. A. Brandly, Chairman
E. E. Jones
L. C. Heemstra
Robert Anderson
J. J. Martin

I Regulation and Quarantine Measures and Procedures

In order to fortify existing regulatory measures the following changes or additions to existing measures and practices are recommended.

1. Expansion of the definition of poultry (see 92.1(j) BAI Order 379) to include "All poultry and birds which may be determined by the Chief of the Bureau of Animal Industry to be capable of introducing and disseminating infectious and parasitic diseases which are common to poultry."

2. Require quarantine for a minimum period of 15 days of all imports of poultry and birds. (See U.S. Postal Regulations pertaining to baby chicks)

3. Re-define, clarify, and strengthen the regulations restricting the interstate movement of diseased poultry.

4. Give critical scrutiny of restrictive regulations pertaining to poultry capcasses, poultry meat and poultry meat products offered for importation with the object of miniminizing the hazards of introducing exotic infectious and parasitic agents.

5. Fully instruct all quarantine personnel on the salient features of exotic poultry diseases.

6. Study and apply more adequate criteria for assessment of the status of individual lots of birds, particularly where deaths have occurred during transit or in quarantine.

7. Cooperate fully with other disease control agencies and utilize the developments coming from surveys and studies initiated by diagnostic and other laboratories.

II Dealing with Exotic Infections

When exotics are suspected -

1. Invoke immediate quarantine of premises, area, or State, until diagnosis is confirmed.

2. Establish buffer zone around area. If suitable biologics are available, vaccinate to induce active protection within the discretion of State-Federal authorities.

3. Resort to immediate eradication by destruction of infected and known exposed stock, terminal disinfection, and temporary re-stocking of premises with susceptible test stock. Proper execution and support of this program by government agencies, plus adequate State and Federal indemnities, are essential to implement an eradication program.

III Control of Existing Infections

1. Augment all possible means of education, e.g., those of the Federal Civil Defense Agency, the Bureau of Animal Industry, and other Federal as well as State agencies, on the value and importance of basic principles of disease suppression, control, and eventual eradication.

   a. Sound management, husbandry, and sanitation practices

   b. Prompt early diagnosis for disease with assistance of local veterinarians and State and regional laboratories.

   c. Systematic prophylactic vaccination when warranted.

   d. Judicious use of established pharmaceutic agents.

   e. Expansion and extension of education on the essentiality of proper preventive and control measures against both exotic and domestic diseases. Visual aids, radio, circulars, newspaper articles, etc., should be utilized to the maximum extent.

2. Initiate and sponsor support of an adequate, comprehensive, long-range research program as an essential step toward providing fundamental new knowledge, especially on epizootiology, detection and immunization against certain domestic, as well as exotic, maladies.

This would embrace -

a. Critical definition of research programs and goals.

b. Encouragement of properly qualified persons toward understanding adequate graduate training for research.

c. Adequate emphasis on fundamental as well as applied research in the fields of poultry diseases.

d. Seeking substantial financial support for training in, and prosecution of, research by public funds.

3. Coordinate and apply to the fullest extent pertinent data, information and findings of all agencies - regulatory, quarantine, inspection, diagnostic, research, and the poultry and related industries.

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Prepared by
C. H. Thompson
F. Rensch
12-1953